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MR. THOMAS MEEHAN referred to a potato presented to the Academy some months ago by Mr. Henszey, a member, which had the appearance of one potato growing out of the centre of another. The opinion of all who saw it was that it was really a case of this kind. It had been handed to him by the curators, and on dissection, though no exact place of origin could be traced, there seemed nothing to indicate any other theory of origin than that one potato had really grown out of the centre of the other.

But there were serious physiological reasons in the way of such a theory. A potato tuber is really but a thickened axis, in which the greater part of the interior structure would be incapable of developing a bud which would produce a tuber such as this one had done. The origin of a new tuber from an old one would be nearer the old ones surface. He had been looking for some further explanatory facts, and believed he had them here this evening, in the potato tubers he now handed to the members. They were about the size of hen eggs, and were pierced in every dircetion by stolons of the common couch grass, *Triticum repens*. They had gone completely through, as if they were so much wire, and in one instance two tubers had become strung together by the same stolon, as if they were two beads on a string. One would suppose that the apex of the stolon, when it came in contact with the hard surface of the tuber, would turn aside and rather follow the softer line of the earth; but there was no appearance of any inclination to depart from their direct course. They had gone apparently straight through. He had no doubt the potato before referred to was a similar case, a potato stolon had penetrated another potato, and instead of going through as these grass spears had done, terminated in the centre, and formed the new potato there.

It was worthy of thought whether so much attention had been given to this direct force in plants as the subject deserved. It was well known that a mushroom would lift a paving stone many times it own weight, rather than turn over and grow sideways, which it would appear so much easier for it to do; and tree roots growing against walls would throw immensely strong ones over, though one would think the pressure against the softer soil would give room for their development, without the necessity of their expending so much force against the wall.

November 15th.

The President, DR. RUSCHENBERGER, in the Chair.

Twenty-seven members present.

A paper was presented for publication entitled "A Sketch of the Classification of the American Anserinæ," by B. H. Bannister.

PROF. LEIDY directed attention to some fossil bones which had been submitted to his examination by Prof. J. D. Whitney. According to the accompanying label, they were found under Table Mountain, near Shaw Flat, Tuolumne Co., California.

The bones are friable, and have attached portions of a light ash colored gravel. Several masses of the latter substance, accompanying the bones, contain casts of some fruit.

The bones are as follow:

1. A metacarpal bone of a ruminant of large size. In form and construction it bears more resemblance to that of the Lama and Camel, than of other ruminants with which I have the means of comparing it. As in the Lama and Camel the lower articular extremities are divergent, and the articular surfaces are provided with a median ridge only at the back part. In ordinary ruminants, as in the Ox, Deer, Sheep, etc., the median ridge is produced the entire extent fore and aft of the articular surfaces. The peculiar arrangement

in the extinct animal, as in the Lama and Camel, allowed a greater spread or divergence of the toes in the extended condition. The fossil bone is 19 inches long; the breath of its proximal end is 3½ inches, of its distal end 4 inches. In the skeleton of a Camel in our museum, the corresponding bone is 13 inches long.

2. The distal extremity of another metacarpal of the same animal.

3. The proximal end of a femur, probably of the same animal, with the head of the bone 3 inches in diameter. An acetabulum of corresponding size appears to have belonged to the same individual.

4. Two fragments of a tibia probably of the same animal.

The bones mentioned probably represent a large extinct species of Lama, which may be distinguished with the name of AUCHENIA CALIFORNICA. Perhaps the fossils represent a distinct genus, allied to the Lama, but this is a question only to be determined by the discovery of other and more characteristic remains of the animal.

5. A first phalanx, in the collection, resembles in form that of a representation of the same bone in the Lama, and is about the size of that in the Camel. Perhaps it belongs to a small individual of the preceding extinct form; probably to a smaller species. It is 3½ inches long, 1½ inch wide at the proximal end, and 1¼ inch wide at the distal end. The articulation of the latter is not expanded beneath, as in the Camel, for the apposition of the sesamoid bones.

6. The proximal three-fourths of a metacarpal, probably of a Deer. It is of rather more robust proportions than the corresponding bone of the Virginia Deer.

7. An incisor tooth of a small Horse, partially imbedded in a coherent mass of gravel, which also contains the impress of a nut-like fruit.

8. Portion of a tibia of a small Horse, probably pertaining to the same individual as the tooth just mentioned.

9. The lower extremity of a metacarpal, probably of the same Horse. It is proportionately thicker and less wide than in the corresponding bone of the Domestic Horse. The articulation is 1½ inch wide, and 16 lines fore and aft at the median ridge.

The equine remains perhaps belong to a Hipparion.

10. A few fragments of undetermined bones of other animals.

PROF. LEIDY further directed attention to a fossil fragment of the lower jaw of a small pachyderm, which Prof. Hayden had obtained from Henry's Fork of Green River, Wyoming. The specimen contained the fourth, the sixth and the seventh molars. The teeth resemble in form and constitution those of the *Lophiotherium cervulum*, a small pachyderm, described by Prof. Gervais, from an eocene formation of France. The crowns of the fourth to the sixth molars have four lobes; that of the seventh molar has an additional lobe. The crescentic summit of the postero-external lobe joins, by its anterior horn, the antero-internal lobe. A proportionately well developed basal ridge embraces the crowns, except internally, where it is entirely absent. The series of the back four molars occupies a space of 16 lines. The last molar is 5½ lines fore and aft. The base of the jaw is nearly straight the length of the fragment, which is an inch and a half. The depth of the jaw below the fifth molar is half an inch. The species may be named LOPHIOTHERIUM SYLVATICUM.

PROF. LEIDY also remarked that the Philosophical Transactions of the Royal Society of London, Pt. II, 1869, presented this evening, contained a paper by Prof. Owen, on the fossil remains of Equines from Central and South America. It was of special interest to him on account of its being accompanied with excellent illustrations of the dentition of the various species of existing

horses, which, in the absence of original specimens, afforded him the opportunity of making comparisons with the many equine teeth discovered in the tertiary and quaternary deposits of North America.

Prof. Owen describes a new species of Equus from South America, which he names *E. arcidens*. From peculiarities of the teeth, he refers this species, together with two others, also from South America, and named by Dr. Lund *E. principalis* and *E. neogaeus*, to a genus with the name of *Hippidion*. From some of the more important distinctive characters, viz., the extension backward alone of the internal peninsular folds on the triturating surface of the upper molars, a dozen years ago was established the genus *Protohippus* (Pr. A. N. S. 1858, 26, with reference to fig. 1, pl. 7 of Gervais' Rech. s. l. Mammiferes Fossiles de l'Amérique meridionale). On the same grounds were also included in this genus the *E. principalis* and *E. neogaeus* of Lund, together with *E. macrognathus* of Gervais, so far as the remains of the latter appeared to me to be the equivalent of *E. principalis*, (Extinct Mammalia of Dakota and Nebraska, &c., 1869, 276).*

The species of equine animals referable to the genus thus far indicated are as follow:

PROTOHIPPUS, Leidy, 1858.

Hippidion, Owen, 1869.

1. PROTOHIPPUS PERDITUS
 Equus (*Protohippus*) *perditus*, Leidy: Pr. A. N. S. 1858, 26; Ext. Mam. Fauna of Dakota, &c. 1869, 275, 327, 401.

2. PROTOHIPPUS ARCIDENS.
 Equus arcidens, Owen: Phil. Tr. Roy. Soc. London, 1870, 559.
 Equus (*Hippidion*) *arcidens*, Owen: Ibidem, 572.

3. PROTOHIPPUS PRINCIPALIS.
 Equus principalis, Lund: K. Danske Vidensk. Selskab. 93, pl. xlix, fig. 1.
 Equus neogaeus, Gervais: Rech. Mammif. Fos. de l'Amer. Merid. 1855, 33, pl. vii, fig. 1.
 Equus macrognathus, Gervais: Ibidem, pl. vii, fig. 1.
 Equus (*Hippidion*) *principalis*, Owen: Phil. Tr. 572, 573.

4. PROTOHIPPUS NEOGAEUS.
 Equus neogaeus, Lund: K. Danske Vid. Sels. 93, xlix, fig. 3.
 Equus (*Hippidion*) *neogaeus*, Owen: Phil. Tr. 572, 573.

5. PROTOHIPPUS PLACIDUS.
 Leidy: Ext. Mam. Fauna of Dakota, &c. 277, 328, 401.

6. PROTOHIPPUS SUPREMUS.
 Leidy: Ext. Mam. Fauna of Dakota, &c. 328, 401.

In the same Transactions appears a paper, by Prof. W. Thomson, "on *Holtenia*, a genus of vitreous sponges," accompanied with beautiful illustrations. The genus, however, appears to me to be synonymous with *Pheronema* (Pr. A. N. S. 1868, Biolog. and Micros. Dep. 9). A comparison of the figures of *Holtenia Carpenteri*, with those of *Pheronema Annæ* (Am. Naturalist, 1870, 21, 22), leads me to suspect that the two are probably the same.

November 22*d*.

MR. J. D. SERGEANT in the Chair.

Six members present.

* On page 261 of the Ext. Mam. Fauna of Dakota and Nebraska, figs. 2, 3, have been erroneously quoted instead of fig. 1 of Gervais, pl. vii, of the Rech. sur les Mammif. Fos. de l'Amer. Merid.